USB82640

Automotive USB 2.0 Hub and Flash Media Card Controller Combo

Features

- Ultra-fast flash media reader/writer with two exposed Hi-Speed downstream ports for external peripheral expansion
- Supports Secure Digital™ (SD) and SD High Capacity™ (SDHC), MultiMediaCard™ (MMC) and Memory Stick® (MS), MS PRO™ and MS PRO-HG™ cards
- Fully compatible with the USB 2.0 specification
- TrueAuto™ grade
  - Specifically designed, fabricated, tested, characterized and qualified for automotive applications
  - Service and support
- Built to more exacting requirements than AEC-Q100
- PortMap: Flexible port mapping and port disable sequence supports multiple platform designs
- PortSwap: Programmable USB differential-pair pin locations ease PCB design by aligning USB signal traces directly to connectors
- PHYBoost: Programmable USB transceiver drive strength for recovering signal integrity due to compromised system environment
- External and internal memory support for software customization
- Enhanced OEM configuration options available through an external I^2C™ or SPI flash memory
- Customizable Vendor ID, Product ID and Device ID
- Integrated 3.3 V to 1.8 V regulator
- Enhanced ESD protection performance
- 48-pin (7 x 7 mm), QFN lead-free, RoHS-compliant package
- Temperature range: -40 °C to +85 °C

Applications

- Automotive integrated head end unit
- Automotive media player dock
- Automotive consumer connectivity ports
- Portable device charging via USB
- Rear seat infotainment access

Ordering Information

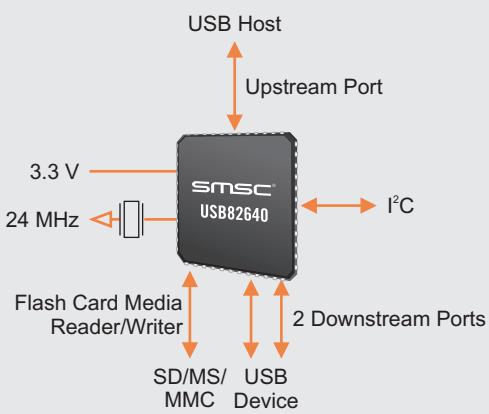
The USB82640 is available as:

USB82640 Tray

Order No. B10263

USB82640 Tape & Reel

Order No. B10262



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Description

The USB82640 offers a versatile, cost-effective and energy-efficient hub controller with 2 downstream USB 2.0 ports and a Secure Digital/Memory Stick flash media interface. The flash media interface can support sustained transfer rates exceeding 35 MB/s, if the flash media, SDIO client and host support those rates.

The USB82640 is designed for applications that demand low power and a small footprint without compromising performance. Offering a high level of interoperability, the USB82640 allows system designers the flexibility of independent access to a wide selection of flash media and additional downstream USB access ports.

The USB82640 consists of USB 2.0 device transceivers with 2-port hub functionality, a fast 8051 microprocessor with Secure Digital/Memory Stick interfaces in a single, fully-integrated chip. It offers USB expansion as well as a flash media read/write interface capable of ultra high-performance operation. Various programmable features, including SMSC's unique PortMap, PortSwap and PHYBoost, are designed to aid system designers in simplifying PCB layout and optimizing bill-of-material cost.

TrueAuto

TrueAuto is SMSC's automotive quality process. It has proven its ability to deliver leading-edge quality and services for IC device products to fulfill the needs of the most demanding automotive customers. TrueAuto is a proven total automotive-grade quality approach. TrueAuto IC device robustness begins with SMSC's design for reliability techniques within the silicon IC itself: automotive-grade robustness and testability are designed into the IC. Once available in silicon, the IC is fully-characterized and qualified over a multitude of operating parameters to prove quality under the harshest conditions. In this, SMSC's TrueAuto approach significantly exceeds the usual automotive reliability standards and customer-specific requirements and goes far beyond the stress tests prescribed by the AEC-Q100 specifications. During the fabrication of TrueAuto products, extensive technologies and processes, such as enhanced monitors are used in order to continuously drive improvements in accordance with SMSC's zero Defects per Million (DPM) goals.

Hub and Flash Media Card Controller Combo	Cost-effective, small-footprint solution integrates two functions into a single chip.
Ultra Fast Flash Memory Access	Up to 35 MB/s data transfer rates
External and Internal ROM	Flexible programming for software architecture and enhanced overall system performance
PortMAP	Flexible port mapping and disable sequences support multiple platform designs.
PortSWAP	Adds per-port programmability to USB differential-pair pin locations. PortSwap allows direct alignment of USB signals (D+/D-) to connectors avoiding uneven trace length or crossing of the USB differential signals on the PCB.
PHYBOOST	Enables programmable four-level USB signal drive strengths in downstream port transceivers. PHYBoost attempts to restore USB signal integrity.

SMSC is committed to working toward a sustainable environment. We endeavor to make continual improvements in natural resource conservation through efficient product design and global operations thereby reducing greenhouse gas emissions generated by our products and facilities. Our environmental life cycle process seeks to reduce our carbon footprint through product life and recyclability and efficient use of materials, energy and transportation. We remain committed to promoting smart energy policies across our global organization.

WEEE-Reg.-No. DE55114090

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